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Infrastructure for sustainable development for all

Note by the Secretary-General

Summary

In its resolution 61/16, the General Assembly decided that the Economic and Social Council should continue to promote global dialogue, including through a thematic discussion on a theme from economic, social and related fields to be decided by the Council and informed by a report of the Secretary-General. In its decision 2016/L.12, the Council decided that the discussion in 2016 should focus on the theme "Infrastructure for sustainable development for all". The discussion can offer States Members of the United Nations guidance on the Global Infrastructure Forum and provide input for the report of the Inter-Agency Task Force on Financing for Development.

Infrastructure is fundamental to sustainable development, playing a catalytic role in fostering economic growth, social development and environmental protection. Integrated, people-centred approaches are needed to build infrastructure that supports the fulfilment of the development vision laid out in the 2030 Agenda for Sustainable Development and leaves no one behind. Designing and building resilient, sustainable and inclusive infrastructure is a universal challenge to be prioritized at all levels as a tool for achieving sustainable development. The global infrastructure gap is also a significant challenge. Actions to support infrastructure for sustainable development need to target those countries that face the largest infrastructure gaps, in particular countries in special situations. The Addis Ababa Action Agenda calls for enhanced support, including financial support and capacity-building, for those countries in need. The United Nations system should build upon its active engagement in support for resilient and sustainable infrastructure while also responding to the call made in the 2030 Agenda for new approaches and catalysing political commitment and action.

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I. Introduction

1. Resilient infrastructure is fundamental to sustainable development. Decisions on infrastructure have profound economic, social and environmental impacts. Properly planned, implemented and accessible infrastructure is a prerequisite for advances across the Sustainable Development Goals, including for economic growth, reducing poverty and inequality and ensuring environmental sustainability. However, the global infrastructure gap is a significant challenge (see annex I). In the Addis Ababa Action Agenda, it is estimated that the infrastructure financing gap in developing countries is between 1 and 1.5 trillion American dollars annually.

2. Infrastructure provides multidimensional benefits. It represents a crucial component for fostering economic and industrial development, plays a catalytic role in improving individual and social well-being and in enabling access to resources, and has important environmental impacts.

3. The 2030 Agenda for Sustainable Development addresses infrastructure across the agenda, in particular through Sustainable Development Goal 9, which commits the international community to building resilient infrastructure and promotes inclusive and sustainable industrialization and innovation. Resilient infrastructure is also a cross-cutting element for other Sustainable Development Goals through sector-specific targets.

4. Sustainable and resilient infrastructure has a central role in the Addis Ababa Action Agenda. While the Sustainable Development Goals focus primarily on infrastructure outcomes, the emphasis in the Addis Ababa Action Agenda is on overcoming obstacles and bottlenecks to investment, including in finance and capacity.

5. Infrastructure also features prominently in other major intergovernmental outcomes related to sustainable development. The Istanbul Programme of Action, the SAMOA Pathway and the Vienna Programme of Action on Science and Technology for Development highlight infrastructure as a crucial means to foster sustainable development in least developed countries, small island developing States and landlocked developing countries, respectively. The Sendai Framework for Disaster Risk Reduction 2015-2030 highlights infrastructure as fundamental in addressing disasters as it supports prevention, resilience and reconstruction. The implementation of the Paris Agreement on climate change will need to be supported through infrastructure that enables countries to adapt to, and mitigate, climate change.

6. In recent years, there have been several new infrastructure initiatives at the global, regional and national levels, including initiatives by the Group of 20, the World Economic Forum and various multilateral development banks. In the Addis Ababa Action Agenda, States Members of the United Nations welcomed those new initiatives, but found that more needed to be done, in particular to ensure that: (a) all countries and sectors had access to necessary financing and technical expertise; and (b) all infrastructure investment was resilient and aligned with sustainable development. To this end, Member States established a new Global Infrastructure Forum, to be led by the multilateral development banks. The inaugural meeting of the Forum was hosted by the World Bank and organized by the multilateral development banks in April 2016, in Washington D.C., in close cooperation with the United Nations and with active participation by the new development banks. The

Forum can become a platform for coordination across infrastructure initiatives and for inclusive dialogue, as called for in the Addis Ababa Action Agenda.

7. Within that context, the present report is submitted to inform the thematic discussion of the Economic and Social Council on "Infrastructure for sustainable development for all". The discussion is meant to provide space for a targeted consideration of that theme. The discussion can offer Member States guidance with respect to the Global Infrastructure Forum, as well as provide input for the report of the Inter-Agency Task Force on Financing for Development. This could encourage infrastructure development to be resilient and aligned with sustainable development, benefit all countries, be universally accessible and serve the needs of all people.

II. Resilient infrastructure and sustainable development

8. The term "infrastructure" encompasses physical structures as well as institution and human capabilities. Economic infrastructure includes transportation, energy, communications and financial services systems. Social and environmental infrastructure includes water and sanitation, schools, hospitals and health-care systems, while institutional infrastructure includes the facilities, equipment, and personnel required for service delivery and governance. The present report is mainly focused on economic, social and environmental infrastructure.

9. The term "resilient" is related to durability and performance against expected standards over time and generally refers to the ability of infrastructure systems, including their interconnected ecosystems and social systems, to withstand disruption, continue to function and retain their structural capacity. Resilience is considered in relation to both natural hazards (such as earthquakes, hurricanes, flooding and drought) and man-made hazards (such as human errors and malevolent attacks). The term has thus become particularly important in the context of climate change and vulnerability.

10. Infrastructure plays a catalytic role in fostering economic growth, reducing poverty and inequality and facilitating accessibility in all countries, in particular in least developed countries, landlocked developing countries and small island developing States, where infrastructure can underpin models of development and embed countries in regional networks supporting economic development. In planning, financing and implementation, countries in special situations have highly context-specific needs that require support by global frameworks geared towards sustainable and equitable infrastructure development.

11. As noted in the Addis Ababa Action Agenda, in many countries, insufficient investment in infrastructure is due in part to inadequate infrastructure plans and an insufficient number of well-prepared investable projects, which underscores the need for government policies along with capacity development. At the same time, financing is also insufficient. Public funds are limited, while the existing incentive structures of many private investors are not necessarily aligned with the long-term investment horizon necessary for many infrastructure projects.

12. In the Addis Ababa Action Agenda, it is pointed out that, given the large financing gap in infrastructure, all financing sources (public, private, domestic and international) will be needed. Specifically, the Agenda addresses the need to bridge the global infrastructure gap, including the $1-1.5 trillion gap in developing

countries, and identify and address infrastructure and capacity gaps across countries and sectors, in particular in least developed countries, landlocked developing countries, small island developing States and African countries.

A. Infrastructure across the three dimensions

13. The availability of infrastructure is crucial for industrial and agricultural production and is therefore a main determinant of economic progress. As an asset that is created, countries need to make explicit and deliberate investment to build all types of infrastructure, which are created and developed over a span of several years.

14. To fully achieve Sustainable Development Goal 9 and other Sustainable Development Goals, including Goal 12 on ensuring sustainable production and consumption patterns, there is a need to transition to a sustainable and productive economy based on an adequate information and telecommunications technology infrastructure.

15. While all three dimensions of sustainable development are interrelated, examining each dimension separately underscores the important role that infrastructure plays across the 2030 Agenda.

Economic dimension

16. Ensuring sustained, inclusive and sustainable economic growth requires investments in infrastructure in a broad range of areas, such as:

(a) Transport, including urban and interurban railways, other urban and rural transport, roads and highways, ports and waterways, and air transport;

(b) Energy and water supply, sanitation and sewerage, and solid waste collection and disposal;

(c) Dams and canal works;

(d) Information and communications infrastructure, including broadband networks on which the global digital economy is being built;

(e) Infrastructure for human capital and skills development, and others.

17. Macroeconomic policies supporting the development of transport, energy and innovation infrastructure can accelerate inclusive and sustainable industrial and economic development, promote economic diversification and competitiveness and boost trade in the developing countries' regions. The development of resilient transport, logistic and industrial corridors can accelerate economic linkages and networks through the integration of modern transport infrastructure into logistics and industrial value chains.

18. By enhancing the business infrastructure to reduce the costs of doing business and attract investment in key transport, logistic, commercial and industrial nodes, countries can start virtuous growth cycles. Industrial parks, zones, cities and districts can be important instruments for fostering technological learning and innovation and for creating jobs. They can facilitate the establishment and growth of industrial agglomerations and the development of small- and medium-sized

enterprise clusters and regional innovation systems, and can act as catalysts for sustainable economic growth.

19. Sustainable transport infrastructure is also an enabler of economic growth and needs to be viewed as an essential ingredient in sustainable development strategies. Transport infrastructure lasts for decades, which means that the decisions made by local and national Governments will have long-lasting impacts on sustainable development. Sustainable transport infrastructure is essential to achieving most of the proposed Sustainable Development Goals, especially those related to food security, health, energy, infrastructure and cities and human settlements.

20. Recent developments in information and communications technology and broadband networks can also facilitate economic growth and development and play a crucial role in supporting sustainable development in developing countries. Investment in information and communications technology can provide opportunities to leapfrog stages of development. For instance, a 10 per cent increase in broadband coverage increases gross domestic product growth by 1.4 per cent in developing countries. In countries where infrastructure gaps in traditional infrastructure are high, information and communications technology can be particularly cost-effective and provide high marginal returns on investment, creating momentum for economic development in service sectors as well as spillovers to other sectors.

21. Universal and affordable access to information and communications technology needs to be made available to all to unlock their transformative potential. Much remains to be done in securing universal access. As shown in annex I, access to such technology, including the Internet and mobile telephony, is still highly unequal. To ensure that gaps in access are addressed, investments in information and communications technology infrastructure in developing countries need to be embedded in national policies that prioritize a broadening of access to all people.

22. Imbalances in global information and communications technology infrastructure also need to be addressed to ensure that investments in such technology provide equitable and sustainable outcomes. Negative impacts include the environmental damages associated with the disposal of e-waste in developing countries as well as the emissions related to information transfer, amplified by the concentration of information and communications technology capacity in developed countries.

23. As highlighted in Sustainable Development Goal 9, economic development and human well-being will need to be supported by high-quality, resilient infrastructure with a focus on affordable and equitable access for all. Goal 9 calls for enhanced technical and financial support for African countries, least developed countries, landlocked developing countries and small island developing States, which often lack the means to build inclusive and sustainable infrastructure. This includes support for transborder infrastructure, which is particularly crucial for landlocked developing countries and small island developing States for accessing markets and fostering economic development through strengthened transport linkages to neighbouring countries.

Environmental dimension

24. Depending on how it is planned, designed, built and managed, infrastructure can have positive or negative impacts on the environment. For example, fossil fuel-based energy generation and transportation produce emissions that contribute to air pollution and climate change.

25. Environmental considerations need to be integrated into all stages of infrastructure needs assessments, option selection, design, planning, construction and maintenance. At the outset, synergies between social and economic benefits and environmental conservation should be considered in choosing infrastructure projects. Safeguard systems at the national level and for international institutions and private financiers help to provide protection against the potential adverse impacts of infrastructure projects on the environment and people affected by such projects. In the Addis Ababa Action Agenda, it is recommended that all development banks maintain social and environmental safeguard systems, including on human rights, gender equality and women's empowerment, that are transparent, effective, efficient, and time-sensitive. Such rules, when combined with robust and effective accountability mechanisms, can mitigate harm, but should be complemented by innovative mechanisms that deliver integrated environmental, social, and economic benefits, such as decentralized renewable energy or public mass transit systems.

26. In many developing countries, most infrastructures are still being built. Given that infrastructures will be around for decades, this provides an opportunity to transition to low-carbon, resource-efficient and climate-resilient infrastructure, including nature-based solutions to avoid getting locked into carbon-intensive development pathways.

27. It also allows avenues for advancing infrastructure that is resilient to potential natural and man-made hazards. Resilience depends both on the performance of the built and modified natural environment and on the contextual characteristics of social, economic and political institutions. To create resilience, infrastructure development will need to take account of risks at the planning and building stages.

28. One of the key challenges to ensuring sustainable infrastructure is the fragmentation of policies. Typically, energy ministries are in charge of energy infrastructure and transport ministries of transport infrastructure, leading to fragmented approaches rather than integrated solutions. National, sustainable development strategies informed by strategic environmental assessments will help to bring about the necessary cohesion, avoid negative impacts and improve service provision within existing resources, which will require a strengthening of holistic planning.

29. Policy frameworks conducive to low-carbon, resource-efficient and resilient infrastructure development are needed, with incentives for increasing the efficiency of infrastructure projects, as are pricing mechanisms that encourage shifting to environmental conservation. This involves redirecting subsidies that encourage a wasteful use of resources or hinder the adoption of more environmentally friendly solutions.

Social dimension

30. Infrastructure is integral to the creation of an enabling environment for social progress and sustainable development. Investing in infrastructure, especially in

disadvantaged areas, can contribute to realizing human rights, narrowing disparities and improving economic opportunities for all. Eradicating poverty, improving living standards and enhancing access to basic services will require targeted investments in sustainable infrastructure, including in critical sectors, such as water and sanitation, energy, telecommunications and transportation. In addition to the social dimension of inclusion, infrastructure can be critical in determining whether universal social and economic policies actually reach certain marginalized or vulnerable members of society.

31. Infrastructure sensitive to gender, age and disability can support women's rights and economic empowerment, contribute to education and the freedom of movement of older persons and persons with disabilities and improve security for all. In many contexts, a lack of available and accessible infrastructure often leads to limitations in the access of women and girls, older persons and persons with disabilities to important health, sanitation and other social infrastructure. Developing infrastructure in targeted areas that lack sufficient coverage can directly contribute to the realization of the 2030 Agenda.

32. In order to achieve the vision of leaving no one behind, infrastructure projects need to be planned and implemented following a people-cantered approach, with the most marginalized groups in mind. Infrastructure development will help to reduce poverty and inequality only if physical, socioeconomic and legal barriers are removed and enabling conditions are created so that the needs of the poorest are met and other vulnerable populations are empowered to participate and benefit. Resilient infrastructure must thus be embedded in policies that promote accessibility by and inclusion of all citizens, regardless of their location or other characteristics. Attention must also be paid to mitigating and remedying the potential negative impact of infrastructure development, especially of large infrastructure projects, on the rights and livelihoods of the people they affect.

B. Two specific global trends and challenges

The urbanization trend

33. Urbanization is a significant global trend that affects infrastructure and has a role to play in advancing sustainable development. It poses both a significant opportunity and challenge.

34. Half of humanity now lives in urban areas and this rate is expected to reach nearly 66 per cent by 2050. The number of people living in cities in emerging markets is expected to double, adding another 2 billion people by 2030. Given that 60 per cent of the areas expected to be urban by 2030 remain to be built, the shape of future cities and infrastructure should be guided proactively.

35. Sustainable development approaches need to guide urban infrastructure development. Overcrowding and pollution, the accumulation of disaster and climate risks, unhealthy and unsafe environments and inadequate housing, energy services, health services, water supply, sanitation and transport services are the results of rapid urban expansion.

36. Holistic urban infrastructure development is crucial. Well-planned infrastructure development that offers a mix of land uses, transport options and jobs generally also offers higher levels of well-being at lower rates of resource use and

emissions. All cities need accessible, safer and more environmentally friendly public transport, housing security, clinics and public services. There is also a need to mobilize financing for sustainable urban development. Well-planned, thoughtfully designed, accessible, smart cities point the way towards sustainable urbanization. Smart cities that protect ecosystems, reduce and manage multidimensional risks and integrate sustainable resource use hold the potential to improve the lives of half the planet's population today, and more than half by 2030.

The challenge of rural sustainable development

37. It will also be important to address rural-urban gaps in infrastructure to ensure equitable development. As 75 per cent of the world's poorest people live in rural areas, infrastructure in the rural context needs to be prioritized to fulfil the promise made in the 2030 Agenda to leave no one behind. As highlighted in the Millennium Development Goals Report 2015, an estimated 2.8 billion people living in rural areas around the world lack access to modern energy services, and 50 per cent of people in rural areas do not have access to sustainable sanitation facilities. Addressing their infrastructure needs will be a crucial factor in eradicating poverty and hunger.

38. Investment in rural infrastructure, in particular transportation (ports and rural roads), soil and water conservation, irrigation systems, electrification and information and communications technologies, is an effective way to stimulate productivity growth. It allows smallholders to connect to markets and thereby provides higher incentives to increase productivity. Irrigation systems allow for increased land productivity, in particular in countries that depend on rain-fed agriculture and often face water shortages.

39. Food losses due to post-harvest losses, inadequate storage infrastructure as well as underdeveloped markets in general are a huge issue in agriculture in developing countries, amounting to a significant proportion of production. Investments in roads and storage would contribute to reducing or even eliminating food loss and, in so doing, would provide a significant boost in the quantity of food actually reaching consumers.

40. Infrastructure and road development are often ranked among the top two sources of overall agricultural growth, second only to research and development investments. In Africa, in particular, irrigation and feeder roads are shown to have a significant effect on output increase and poverty reduction. The importance of transport infrastructure is demonstrated on that continent where, for certain landlocked countries, transport costs can be as high as 77 per cent of the value of their exports. The establishment of development corridors linked to major domestic markets and export facilities can be an effective way to stimulate local economies. Improving market facilities, such as warehouses, storage facilities and market information systems, plays an important role in creating an enabling environment and facilitating the integration of farmers into markets, as well as providing incentives to increase investment, and hence productivity.

41. Many types of labour-saving technology exist and can be made available to large numbers of poor women and subsistence farmers. Infrastructure investments can greatly contribute when designed specifically with gender roles and the needs of rural women in mind. Priority areas for technology and infrastructure investment

include access to water, both for farming and household consumption, and to energy, in particular cooking fuel and on-grid and off-grid electricity.

III. Policy priorities for sustainable infrastructure

42. Designing and building resilient, sustainable and inclusive infrastructure is a universal challenge to be prioritized as a key tool for achieving sustainable development. National policy approaches need to be integrated across the three dimensions and coordinated both regionally and globally to address multidimensional challenges comprehensively.

43. Infrastructure requires long-term planning and financing and institutional strengthening, in which both Governments and private actors have a role. To build a sustainable infrastructure that benefits all, policymakers need to ensure that infrastructure policies are integrated, risk-informed and inclusive, and that the benefits from infrastructure investments are broadly shared.

National level

44. Sustainable infrastructure at the national level requires integrated policymaking that combines the economic, social and environmental dimensions and embeds infrastructure investment plans within national sustainable development strategies. Integrated policy frameworks for sustainable infrastructure are a foundation for achieving sustainable development and empowering communities. An integrated approach is crucial for making progress across multiple Sustainable Development Goals, including in determining appropriate policy and investment options for sustainable infrastructure based on specific country context.

45. The resilience of infrastructure will hinge upon the national governance systems for development policy, planning and decision-making. Strengthening governance capacities, including those of institutions, at all levels will be a key catalyst for fostering risk-informed investments in resilient infrastructure. Disaster risk assessments are also needed for a risk-informed approach seeking to reduce vulnerabilities.

46. Trends and impediments to investment in infrastructure are delineated in the Addis Ababa Action Agenda. It is emphasized in the Agenda that there are constraints that make it challenging for countries to meet their large infrastructure needs. In many countries, insufficient investment is partly due to an inadequate number of investable projects and infrastructure plans, a lack of necessary capacities and an environment that is not enabling. Pressures on public budgets and limited access to sovereign borrowing also constrain public finance. In addition, many countries are hampered by insufficient and poor-quality data on infrastructure gaps and requirements and could benefit from better data to support infrastructure development plans that reflect their priority needs.

47. In response, in the Addis Ababa Action Agenda, Governments agreed to actions at the national level to help to overcome impediments to investment and infrastructure. In addition to continuing to strengthen domestic enabling environments, Governments committed to imbedding resilient and quality infrastructure investment into national sustainable development strategies. Commitments were also made to encourage private investors to assume the longer

investment horizons necessary for infrastructure projects, as well as to take into account sustainability considerations.

Regional level

48. At the regional level, policy coherence and cooperation remain crucial to ensure that priorities for infrastructure are discussed in interregional platforms that can create synergies. Infrastructure, in particular in the context of landlocked developing countries, is not limited by national borders and needs to be integrated at the regional level. Cross-border transport links, for example, may hold the key to fostering economic development and ensuring food security. Therefore, regional institutions need to support greater policy integration in the financing and implementation of infrastructure.

49. Several initiatives have highlighted the scope and significance of regional platforms and cooperation to facilitate the regional exchange of policy priorities, integration and cooperation. The Programme for Infrastructure Development in Africa has been established by the African Development Bank, the African Union Commission and the secretariat of the New Partnership for Africa's Development to facilitate the development of infrastructure in the areas of transport, energy, transboundary water and information and communications technology. The Union of South American Nations has established the Initiative for the Integration of Regional Infrastructure in South America as a forum for coordinating intergovernmental actions, with the aim of promoting the development of transportation, energy and communications infrastructure to strengthen integration, under a standard of equitable and sustainable territorial development.

Global level

50. At the global level, actions to support infrastructure for sustainable development need to target those countries that face the largest infrastructure gaps, in particular countries in special situations. The Addis Ababa Action Agenda calls for enhanced support, including financial support and capacity-building, especially for those countries in need.

51. Although there are ongoing efforts to address infrastructure at the global level, international efforts need a greater focus on sustainability and resilience and on the principle of leaving no one behind. The Global Infrastructure Forum, established by the Addis Ababa Action Agenda and inaugurated during the meetings of the International Monetary Fund and of the World Bank Group in April 2016, serves as a platform to address those issues and ensure that efforts at the global level are synchronized with national and regional priorities.

52. In view of the interlinkages between different sustainable development objectives, financing strategies should also be designed to maximize synergies while taking account of potential trade-offs. The need for integration at all levels of financing was highlighted by the Intergovernmental Committee of Experts on Sustainable Development Financing.

Financing sustainable infrastructure for all

53. The infrastructure financing gap is a significant challenge. Estimates of investment requirements for infrastructure vary widely, depending on assumptions

about economic growth, policies and the scope of what is included. Nonetheless, such estimates can shed light on the magnitude of needs, as well as on areas where those needs are greatest. Estimates are made periodically by both public and private entities. Going forward, as noted in the report of the Inter-Agency Task Force on Financing for Development,[1] the World Bank Group will publish global estimates on infrastructure needs, which are likely to be updated periodically.

54. Identifying the infrastructure gap by countries and sectors is particularly challenging, yet sectorial data could be a basis for understanding trends and addressing challenges. To date, there is no universal database on infrastructure investment. Rather, different databases cover different aspects of infrastructure investment (see annex II). Those can serve as a basis for tracking trends in different types of investment across countries and sectors.

55. The Addis Ababa Action Agenda underscores that different types of infrastructure will require different funding sources. There are three main types of financing: public sector resources; collaborative initiatives between the public and private sectors that draw on the resources of both parties; and initiatives led by private investors.

56. The vast majority of financing for infrastructure investment in developing countries is from domestic sources, with a large share often emanating from the public sector. The respective roles of the public and private sectors in financing infrastructure differ markedly between developed and developing economies. While in developed economies two-thirds of infrastructure investment is financed by the private sector and one-third by the public sector, the ratio is reversed in developing countries.

57. There are also large differences in the roles of public and private investment across sectors. Most private investors will only invest when there are positive cash flows and the risk-adjusted returns are competitive with alternative investment opportunities. As a result, telecommunications, for example, have a higher proportion of private financing. However, many types of highly beneficial social infrastructure are not likely to produce positive financial returns, and thus are generally largely financed by public sources.

58. In recent years, a number of initiatives have been instituted to overcome barriers and unlock long-term financing for infrastructure. These initiatives include direct financing of infrastructure projects and measures to facilitate investment in infrastructure through the provision of advisory services, capacity-building for developing countries and the convening of discussion and research on ways to address infrastructure needs.

59. Recent infrastructure financing initiatives include the New Development Bank and the Asian Infrastructure Investment Bank, both established in 2014, and the ASEAN Infrastructure Fund, established in 2013.

60. Another example is the Global Infrastructure Facility of the World Bank, established in 2014, which is designed to build a global pool of infrastructure projects but will also engage in co-financing. It is an open platform that includes

[1] *Addis Ababa Action Agenda: Monitoring Commitments and Actions, Inaugural Report 2016, Inter-Agency Task Force on Financing for Development* (United Nations publication, Sales No. E.16.I.7).

Governments, multilateral development banks and private sector financiers and focuses on the design, preparation and financial structuring of public-private partnerships and other complex infrastructure investments with commercial potential.

61. Recent collaborative initiatives between the public and private sectors have seen Governments or development institutions provide assistance in setting up infrastructure funds with the objective of attracting finance from institutional investors, such as the Pan African Infrastructure Development Fund. The objective is to invest directly in infrastructure projects in Africa and in securities of companies that own, control, operate or manage infrastructure or infrastructure-related assets.

62. The Addis Ababa Action Agenda stresses the important role of development banks in infrastructure financing and, to this end, established the Global Infrastructure Forum. The Forum is mandated to improve alignment and coordination among established and new infrastructure initiatives, multilateral and national development banks, United Nations agencies, national institutions, development partners and the private sector, as well as to encourage a greater range of voices to be heard and for investments to be resilient and environmentally, socially and economically sustainable.

63. The Addis Ababa Action Agenda also recognizes the important potential of blended finance and public-private partnerships in financing infrastructure. However, it recognizes that, to harness this potential, careful consideration needs to be given to the appropriate structure and use of blended finance instruments to ensure that risks and rewards are shared fairly, that clear accountability mechanisms are included and that projects meet social and environmental standards. Governments have committed to building capacity to enter into public-private partnerships, including with regard to planning, contract negotiation, management, accounting and budgeting for contingent liabilities. They have also agreed to hold inclusive, open and transparent discussions when developing investment guidelines for public-private partnerships.

Peacebuilding

64. The post-conflict restoration of infrastructure can be a major dividend of peace and a key factor in the success of peacebuilding and recovery for post-conflict countries. During conflict, infrastructure is often heavily damaged and destroyed and therefore access suffers. Electricity generation and distribution losses increase, electricity consumption per capita decreases, and fewer people have access to quality sources of water, sanitation and telephone and communications services.

65. The condition of infrastructure may also be an indicator of whether a conflict-emerging country may be moving back into conflict or making a peaceful transition out of the conflict cycle. The rapid restoration of essential services, such as water supply, sanitation, health services, schooling and electricity services, assists in the perception of a return to normality and contributes to the peace process. Telecommunications investments, in particular in mobile networks, materialize soon after the end of a conflict. Electricity generation and distribution projects are often completed about three years after a conflict and increase in frequency after five years. Private investments in transport and water supply tend to come much later. Within the transport sector, seaports receive the majority of private investments.

66. The restoration of infrastructure in post-conflict countries must address several challenges. One is that major infrastructure projects often require significant financial investments and cost-recovery measures. As institutions of governance are often fragile in post-conflict situations and some infrastructure requires a sizable investment over a long period, securing investments and achieving necessary partnerships between the public and private sectors can be difficult.

67. Another challenge is that the distribution of the costs and benefits of infrastructure projects can be skewed, creating unequal outcomes, which can hamper peacebuilding efforts. Post-conflict Governments may also find it extremely challenging to coordinate a myriad of infrastructure projects, and the legal system may not provide adequate protection for infrastructure investments.

68. The restoration of infrastructure also involves trade-offs in relation to natural resources and there is a need to find an appropriate balance. Focusing on infrastructure that will aid in the rapid extraction and exportation of natural resources will allow the country to earn much-needed foreign currency to pay for recovery. At the same time, focusing on service infrastructure may have a more significant impact on the non-income dimensions of human development, with positive spill-over effects on overall development.

69. There are also sociopolitical trade-offs to rebuilding infrastructure, such as issues of accessibility and other elements of inclusion.

IV. Role of the United Nations system

70. The 2030 Agenda provides an overarching framework for the United Nations system to support and catalyse the realization of the universal and comprehensive Sustainable Development Goals. With regard to the Agenda and infrastructure, the United Nations system is actively engaged in various supporting efforts to ensure sustainable infrastructure development and has three particular roles: integrated policy advice and capacity-building, support for partnerships and support for infrastructure data for global follow-up and review. In addition, the United Nations supports the establishment of legal international frameworks and guiding the development of bilateral agreements, such as with transit countries in the case of landlocked developing countries. There remains also a range of relevant international legal frameworks addressing, for example, transit, shipping, road and rail transport, that are managed by United Nations entities.

71. The broad commitments and ambition of the 2030 Agenda require the United Nations system to move to its universal and integrated vision of sustainable development, with its functions meeting the infrastructure needs of individual countries. The United Nations system will need to develop, reprioritize, specify and integrate many of its functions within and across entities to make them more relevant. Accordingly, the United Nations system needs to fully align and integrate its related functions of policy advice, data production and review and policy advocacy, both within and across entities, to foster sustainable and resilient infrastructure development worldwide.

72. The United Nations system should build upon what already exists, yet respond to the call made in the 2030 Agenda for new approaches, and ensure maximum coherence and efficiency. It should also help to catalyse political commitment and

action. The changes must take place both at the global, regional and national levels to ensure that the United Nations system functions are fully aligned to support Sustainable Development Goal 9.

73. The United Nations also has an important role to play in research and analysis that can provide the backbone of norms and standards in the realm of sustainable infrastructure. This includes norm setting with regards to institutionalizing the emphasis on ensuring that investments and management of infrastructure are equitable, resilient and sustainable. In such a normative framework, priority will be given to infrastructure that best serves to advance sustainable development in all its dimensions.

74. There is a need for greater integration of the activities of United Nations entities at the global and regional levels, without necessarily undermining the policy or operational independence of those entities. Addressing multidimensional, cross-sectoral and cross-border challenges related to infrastructure will require an integrated United Nations system, not just at the national level, but also at the regional and global levels. Integration at the national level will need to be supported by integration at the regional and global levels. Such regional and global integration will also enable entities to respond more effectively to global challenges to resilient infrastructure for sustainable development.

75. To advance Sustainable Development Goal 9, the policy advocacy, policy analysis and programme implementation functions of the United Nations entities will need to be evidence-based. An initiative to start promptly using a limited number of indicators for which data are readily available should allow for an early review of progress. At the same time, the Inter-Agency Task Force on Financing for Development will follow-up on progress with regard to fulfilling the commitments made in the Addis Ababa Action Agenda using the data sources presented in annex II.[2]

76. The United Nations system should also facilitate multi-stakeholder engagement in priority setting and the review of progress in infrastructure, supported by data and sound analysis. The United Nations system will need to reprioritize and enhance its support for generating, processing and disseminating infrastructure-related data, analysis and review at the country level. Sustainable Development Goal 9 includes several related targets and indicators, and the United Nations entities will need to invest significantly in their own capacities and in the capacities of their national partners to ensure that data are properly collected, analysed and reported in support for implementation and review.

V. Key policy messages and recommendations

Resilient infrastructure and sustainable development

77. Resilient infrastructure is fundamental to sustainable development for all. To reach the goal of leaving no one behind, a people-cantered approach to the provision of infrastructure is crucial, requiring attention to gender and the need to bridge disparities of all kinds.

78. Integrated and coherent approaches are needed to build resilient infrastructure to support sustainable economic growth, social development and environmental

[2] Ibid., see chap. I.4.

protection. The achievement of Sustainable Development Goal 9 on resilient infrastructure and the commitments made on infrastructure in the Addis Ababa Action Agenda will thus require significant planning, investment, partnership and cooperation among public and private stakeholders.

79. Sustainable Development Goal 9 can also be seen as a catalyst for achieving other Sustainable Development Goals, including those relating to climate change, energy, water and sanitation, sustainable cities, education, health and the protection of ecosystems, all of which will require significant infrastructure investments to reach the associated targets.

80. Resilient infrastructure requirements vary among countries and investment plans would need to be tailored to diverse needs. The issue of resilient infrastructure should be addressed in an integrated manner with respect to sustainability.

81. Financing for sustainable infrastructure needs to be strengthened, including through new funding sources, new and enhanced partnerships and innovative financing mechanisms.

82. Investment in infrastructure from domestic sources accounts for the bulk of infrastructure financing, with the remainder coming from external sources, including traditional and emerging development partners.

83. There is a need to develop national and international safeguards to ensure that investments are environmentally and socially sustainable while also economically productive. Voluntary guidelines for global infrastructure development can contribute to this effort.

84. The new global infrastructure finance mechanisms should give priority to infrastructure that is resilient and supports sustainable development.

85. Infrastructure policies, targeting both urban and rural areas, would be essential vehicles to enhance accessibility, productivity and effectiveness:

(a) As the world becomes increasingly urbanized, investments in relevant sustainable infrastructure, such as in energy, water and transport, will be crucial for sustainable urbanization. Resilient infrastructure development should be integrated into urban planning to ensure sustainable urbanization;

(b) There is a need for the further development of resilient rural infrastructure, such as roads, markets, storage facilities and communications services.

86. Insufficient modern infrastructure is one of the key bottlenecks that constrain economic growth and sustainable development. With this in mind, special attention should be given to Africa and countries in special situations, as their infrastructure development remains a significant challenge.

87. African countries should continue to prioritize infrastructure development and maintenance in the light of their significance in advancing regional integration.

88. There is a need to take account of disaster and climate change risk considerations when building resilient infrastructure for sustainable development and to emphasize governance as a facilitator and catalyst for sustainable development.

89. Strengthening governance systems, mechanisms and capacities, including for risk governance, will be critical to foster transparent, inclusive and accountable development planning, decision-making and implementation processes at all levels.

The United Nations system

90. The United Nations system should facilitate the review and follow-up of the commitments and action items on infrastructure in the Addis Ababa Action Agenda.

91. The United Nations system should support and remain engaged in the Global Infrastructure Forum, including working with the new multilateral development banks to ensure that the Forum achieves the goals set out in the Addis Ababa Action Agenda.

92. The Economic and Social Council segments and forums should also provide space for additional analytical discussions on infrastructure, which would inform the Global Infrastructure Forum, and address the question of how to ensure that infrastructure is aligned with sustainable development and reaches all countries, so that no one is left behind.

93. The United Nations system should support countries' efforts to formulate and implement integrated policies for resilient sustainable development infrastructure, a broad range of forms of cooperation and a strong focus on partnerships.

94. Support for sustainable infrastructure should be provided by the United Nations system through integrated policy advice, technical assistance, data and capacity-building. The development of strategic frameworks to ensure integrated, multidimensional and cross-sectoral support is also essential.

95. The United Nations system should provide thought leadership with regard to:

(a) National, regional and global norm-setting and policy development on the substantive and operational dimensions of Sustainable Development Goal 9 and commitments made in the Addis Ababa Action Agenda, identifying and responding to differentiated needs;

(b) Developing options for integration and coherence in the policy objectives of the economic, social and environmental dimensions of infrastructure, including the interaction between Sustainable Development Goal 9 and other Sustainable Development Goals;

(c) Facilitating the further evolution of intergovernmental and multilateral dialogues, agreements and institutional cooperation in the area of sustainable and resilient infrastructure, including by remaining engaged in the Global Infrastructure Forum.

96. The United Nations system should assist countries, at their request, in implementing Sustainable Development Goal 9 and the commitments made in the Addis Ababa Action Agenda, in particular with regard to policy integration and follow-up and review, including support for:

(a) Designing coherent and nationally determined implementation strategies and infrastructure plans;

(b) Identifying resources and investment requirements for achieving Sustainable Development Goal 9, with a focus on financing and other means of implementation;

(c) Facilitating access to, and the development of, science and technology in countries and regions that need increased support;

(d) Follow-up and review, as part of the integrated Sustainable Development Goal-based approach to implementation;

(e) Capacity-building to facilitate risk-informed development paradigm.

97. Through strengthened partnerships, in particular with development banks and the private sector, specific support should be provided by the United Nations system to resilient infrastructure, including to the implementation of the Agenda 2063 of the African Union and its First Ten-Year Implementation Plan, 2014-2023.

98. The Economic and Social Council system can identify trends, affirm policy options and forge policy coherence, providing an effective follow-up and review of progress towards resilient infrastructure, including through the high-level political forum on sustainable development under its auspices, and its forum on financing for development follow-up and the Development Cooperation Forum.

Annex I

Infrastructure gap

Electric power consumption in kWh per capita (2013)

Five highest	Iceland	54 799.2
	Norway	23 325.7
	Bahrain	18 216.6
	Canada	15 519.3
	Finland	15 509.7
Five lowest	Ethiopia	64.6
	Eritrea	62.2
	Niger	48.6
	Haiti	48.5
	South Sudan	38.9

Mobile cellular subscriptions per 100 people (2014)

Five highest	Kuwait	218.4
	Maldives	189.4
	Saudi Arabia	179.6
	United Arab Emirates	178.1
	Bahrain	173.3
Five lowest	South Sudan	24.5
	Cuba	22.5
	Kiribati	17.4
	Democratic People's Republic of Korea	11.2
	Eritrea	6.4

Internet users per 100 people (2014)

Five highest	Iceland	98.2
	Norway	96.3
	Denmark	96.0
	Andorra	95.9
	Liechtenstein	95.2
Five lowest	Somalia	1.6
	Burundi	1.4
	Timor-Leste	1.1
	Eritrea	1.0
	Democratic People's Republic of Korea	0.0

Source: World Bank.

Annex II

Infrastructure investment data sources

Name	*Investment data by sector*	*Investment data by country*	*Public-private partnership investments in infrastructure*	*Number of countries covered*	*Latest update and frequency*
World Bank world development indicators database	Yes	Yes	Yes	82	Annually
Private participation in infrastructure project database of the World Bank	Yes	Yes	Yes	139	Annually
Statistics database of the Organization for Economic Cooperation and Development	Yes	Yes	No	34	Annually (latest in 2013)
United Nations Conference on Trade and Development-Institutional Development Funds database	Yes	Yes	No	200	Annually
IHS global insight construction database[a]	Yes	Yes	Not disclosed	74	Quarterly
Project Finance International[a]	Yes	Yes	Not disclosed	Not Disclosed	Not disclosed
Preqin database[a]	Yes	Not disclosed	Yes	Not Disclosed	Not disclosed
Dealogic platform database[a]	Not disclosed	No	Not disclosed	Not Disclosed	Not disclosed
Oxford Economics[a]	Not disclosed	No	Not disclosed	Not Disclosed	Not disclosed
Moody's Global Infrastructure Focus Newsletter[a]	Not disclosed	Not disclosed	Not disclosed	Not Disclosed	Monthly
GRESB[a]	Yes	Not disclosed	Not disclosed	Not Disclosed	Not disclosed
European PPP Expertise Centre market updates report	Yes	Yes	Yes	35	Semi-annually (latest in 2015)
United States Bureau of the Census	Yes	No	No	1	Monthly (latest in December 2015)

Name	*Investment data by sector*	*Investment data by country*	*Public-private partnership investments in infrastructure*	*Number of countries covered*	*Latest update and frequency*
Treasury database of the United Kingdom	Yes	No	No	1	Annually
Canadian public-private partnership project database	Yes	No	Yes	1	Not disclosed
Africa Infrastructure Knowledge Program	Yes	Yes	No	25	Not disclosed
Database of infrastructure projects in India	Yes	No	Yes	1	Not disclosed

Source: *Addis Ababa Action Agenda: Monitoring Commitments and Actions, Inaugural Report 2016, Inter-Agency Task Force on Financing for Development* (United Nations publication, Sales No. E.16.I.7).

Note 1: the European Investment Bank and other regional development banks may have additional data but those are not released to the public.

Note 2: only the treasury database of the United Kingdom explicitly presents pure private and public financing data.

Note 3: "not disclosed" indicates that access is based on subscription or unknown at the time of publication.

Note 4: breakdown information of the data sources requiring subscriptions is given in their marketing materials.

[a] Free access not allowed.